Amendments to the Claims

Please amend the claims as follows:

Claims 1-123 (Canceled).

124.   (Currently Amended) In a computer system having a processor operatively coupled to a cursor control device and a cursor, the cursor control device further including a light source and a sensor, a method of ~~processing cursor control data for the cursor control device~~ moving the cursor comprising the steps of:

programming the processor with a set of instructions;

using the processor and the instructions to perform the steps of:

determining a measured tracking value representative of motion of the cursor control device sensed by the sensor;

performing a projection calculation for determining a projected tracking value, the projection calculation involving a historical tracking value;

calculating a tracking confidence value ~~representative of a ratio between the measured tracking value and the projected tracking value;~~ based on an illumination value representative of an intensity of light sensed by the sensor;

generating an enhanced tracking value representative of a ~~summation~~ of the tracking confidence value multiplied by the measured tracking value and ~~the~~ inverse ~~of the tracking confidence value~~ a value of (1-the tracking confidence value) multiplied by the projected tracking value; and,

moving the cursor according to the enhanced tracking value.

125.   (Previously Presented) A method according to claim 124, wherein the sensor provides a

pair of measured tracking values representative of motion of the cursor control device,

wherein the step of performing a projection calculation includes determining a pair of

projected tracking values using a pair of historical tracking values,

wherein the step of generating an enhanced tracking value includes determining a pair of

enhanced tracking values; and,

wherein the step of moving the cursor includes moving the cursor according to the pair of

enhanced tracking values.

126.   (Original) A method according to claim 125, wherein each of the pair of measured

tracking values, projected tracking values, historical tracking values, and enhanced tracking

values is representative of motion in a respective one of a pair of orthogonal directions.

127.   (Currently Amended) A method according to claim 124, ~~where the cursor control device~~

~~further includes a light source and~~ wherein the step of calculating a tracking confidence value

~~involves an illumination value representative of an intensity of light sensed by the sensor; and,~~

~~wherein the method~~ further comprises the step of performing an illumination calculation for

determining the illumination value, the illumination calculation involving a shutter value

received from the sensor for a subject sensor scan and a brightness value indicative of an amount

of light emitted from the light source during the subject sensor scan.

128.   (Previously Presented) A method according to claim 124, wherein the enhanced tracking

value is such that if the tracking confidence value is a first value then the enhanced tracking

value is equal to the measured tracking value, and if the tracking confidence value is a second

value then the enhanced tracking value is equal to the projected tracking value.

129. (Previously Presented) A method according to claim 128, wherein the enhanced tracking value is such that if the tracking confidence value is a third value then the enhanced tracking value is equal to a weighted combination of each of the measured tracking value and the projected tracking value.

130. (Original) A method according to claim 124, wherein the measured tracking value is representative of motion sensed by the sensor during a subject sensor scan, and the historical tracking value is related to at least one sensor scan prior to the subject sensor scan.

131. (Original) A method according to claim 130, wherein the historical tracking value is calculated using the enhanced tracking value for said at least one sensor scan prior to the subject sensor scan.

132. (Previously Presented) A method according to claim 127, wherein the illumination value is representative of an intensity of light sensed by the sensor during the subject sensor scan.

133. (Previously Presented) A method according to claim 124, wherein the step of generating an enhanced tracking value includes the further step of applying the formula:

$$dx = (Mdx)*alpha + (1.0-alpha)*Pdx$$

wherein:

dx is the enhanced tracking value;

mdx is the measured tracking value;

alpha is the tracking confidence value; and,

Pdx is the projected tracking value.

134. (Original) A method according to claim 124, further comprising the step of storing the enhanced tracking value.

135.   (Previously Presented) A method according to claim 134, wherein the steps of performing a projection calculation, calculating a tracking confidence value and generating an enhanced tracking value are repeated using the stored enhanced tracking value as a basis for determining the historical tracking value.

136.   (Currently Amended) A method according to claim 132, ~~wherein the cursor control device further includes a light source and~~ further comprising the step of controlling the intensity of light emitted by the light source.

137.   (Canceled).

138.   (Previously Presented) A method according to claim 136, wherein the step of controlling the intensity of light emitted by the light source includes controlling the intensity of light based on a shutter value signal received from the sensor.

139.   (Previously Presented) A method according to claim 136, wherein the step of controlling the intensity of light emitted by the light source includes controlling the intensity of light based on a contrast signal received from the sensor.

140.   (Previously Presented) A method according to claim 136, wherein the illumination value is based on information received from the sensor and an intensity at which the light source is controlled during the step of controlling the intensity of light.

Claims 141-146 (Canceled).